

LISTING OF THE CLAIMS

Applicants hereby present the claims, their status in the application, and amendments thereto as indicated:

1. (Currently Amended) In combination, a light source and a subject, wherein the light source has an illumination spectrum characterized by ~~one of a~~ distinctively stronger emission peak at a predetermined wavelength within a visible spectrum compared to other wavelengths, ~~and a distinctly weaker emission gap at the predetermined wavelength compared to said other wavelengths;~~ and,

the subject has a pigment applied thereto, wherein the pigment has a reflection spectrum characterized by one of a distinctively stronger reflection peak at the predetermined wavelength compared to said other wavelengths~~[,]~~ and a distinctly ~~distinctively~~ weaker reflection gap at the predetermined wavelength compared to said other wavelengths;

wherein the pigment gives the subject has a distinct appearance when illuminated by the light source, due to the emission peak matching one of the reflection peak and the reflection gap, as compared to a nominal appearance when illuminated by an alternate light source which does not include the distinctively stronger emission peak at the predetermined wavelength as compare to said other wavelengths a match and a mismatch between the illumination spectrum and the reflection spectrum.

2. (Canceled)

3. (Currently Amended) ~~The combination of claim 2~~ In combination, a light source and a subject, wherein,

the light source has an the illumination spectrum of the light source has characterized by a plurality of narrow peaks within a visible spectrum;

the subject has a pigment applied thereto, wherein the pigment has a reflection spectrum characterized by one or more reflection gaps;

the pigment gives the subject a distinct appearance when illuminated by the light source due to a color shift from at least one of the narrow peaks matching one or more

of the reflection gaps, as compared to a nominal appearance when illuminated by a broadband light source.

~~the illumination spectrum of the light source has a plurality of narrow peaks that add to at least partly illuminate the subject over a range comparable to a broadband source, and wherein the distinct appearance of the subject is a color shift relative to broadband illumination arising from the reflection spectrum having a reflection gap matched to one of the narrow peaks of the source.~~

4. (Currently Amended) The combination of claim [[2]] 3, wherein the ~~reflection spectrum of the subject pigment is further characterized by a plurality of reflection peaks interspersed between the one or more reflection gaps one of peaks and bandgaps, that are separated by one of nonreflective gaps and reflective bandwidths respectively, wherein reflection of the subject is a result of adding together bands of the illumination spectrum that correspond to bands of the reflective spectrum, and wherein the distinct appearance of the subject is a color shift arising alternatively from the reflection spectrum of the subject including and not including bandwidths that are matched and mismatched between the subject and the source and the further source.~~

5. (Currently Amended) The combination of claim [[4]] 3, wherein the ~~illumination spectrum of the light source has narrow peaks corresponding correspond to primary colors that add to illuminate the subject, and wherein the distinct appearance of the subject is a color shift arising from the reflection spectrum having at least one said reflection gap preventing reflection of the subject at least at one of the primary colors.~~

6. (Currently Amended) The combination of claim 5, wherein the ~~illumination spectrum has narrow peaks include at least red, green and blue peaks, and wherein one of the reflection gap gaps of the subject substantially corresponds to the green peak.~~

7. (Currently Amended) The combination of claim [[5]] 4, wherein the ~~pigment is further characterized by two reflection peaks, one each on either side of and adjacent to the reflection gap that matches one of the narrow peaks illumination spectrum has discrete illumination peaks in a visible color spectrum and the further light~~

source comprises a broadband source with a substantially continuous distribution of light energy through the and adjacent to the reflection gap, whereby illumination of the subject using the broadband source matches the reflection spectrum adjacent to the reflection gap, thus concealing the reflection gap under the broadband source.

8. (Currently Amended) The combination of claim 1, wherein the distinct illumination emission peak corresponds to a primary color, and the illumination spectrum is further characterized by further comprising at least one additional distinct illumination emission peak that sums with the primary colors to afford, such that the illumination spectrum provides simulated broadband illumination by summing primary colors, and further comprising a second light source with a spectrum having a gap at the predetermined wavelength, whereby the primary color is switched in and out by shifting between the first and second light source.

9. (Currently Amended) A method for producing a visible change in appearance, comprising the steps of:

providing applying a pigment to a subject with a pigmentation, the pigment having at least one discrete absorptive absorption band within a reflective spectrum;

illuminating the subject with a first light source having an a visible illumination spectrum encompassing the reflective spectrum of the pigmentation pigment, whereupon the subject has an appearance that is nominal;

subsequently illuminating the subject with a second light source characterized by an a visible illumination spectrum with discrete illumination bands, wherein at least one of the illumination bands overlaps the absorptive absorption band of the pigmentation pigment, thereby visibly changing the appearance of the subject to be different than nominal.

10. (Original) The method of claim 9, wherein the discrete illumination bands of the second light source include primary color wavelengths having peak amplitudes.

11. (Currently Amended) The method of claim 10, wherein the primary color wavelengths include red, blue and green visible wavelengths and the at least one

absorption band of the ~~pigmentation~~ encompasses pigment overlaps at least one of the primary color wavelengths.

12. (Currently Amended) The method of claim 11, wherein the absorption band of the ~~pigmentation~~ pigment and the illumination bands of the illumination spectrum each comprise a primary color wavelength having a full width half maximum bandwidth of about 10 nm.

13. (Currently Amended) The method of claim 12, wherein the illumination spectrum includes red, green and blue illumination bands and the absorption band of the ~~pigmentation~~ consists of pigment includes one of a red, green and blue band overlapping a corresponding one of the illumination bands.

14. (Original) The method of claim 13, wherein the overlapping band is a green band.

15. (Original) The method of claim 13, wherein the overlapping band is a blue band.

16. (Currently Amended) The method of claim 13, comprising producing the ~~pigmentation~~ pigment of the subject by incorporating in a surface of the subject at least one rare earth composition having at least one characteristic absorptive absorption band corresponding substantially to wavelengths of at least one of about 440 nm (blue), 545 nm (green) and 611 nm (red).

17. (Currently Amended) The method of claim 16, wherein the at least one characteristic absorption band and [[a]] the corresponding said illumination band are provided by discrete spectral peaks having a full width half maximum bandwidth of about 10 nm.

18. (New) The combination of claim 1, wherein the pigment is applied to the subject as a surface coating.

19. (New) The combination of claim 1, wherein the pigment is applied to the subject by incorporating the pigment into the subject.

20. (New) The combination of claim 1, wherein the pigment is applied to the subject as an identifying indicia.

21. (New) The method of claim 13, wherein applying the pigment to the subject includes applying the pigment as a surface coating.

22. (New) The method of claim 13, wherein applying the pigment to the subject includes incorporating the pigment into the subject.

23. (New) The method of claim 13, wherein applying the pigment to the subject includes applying the pigment as an identifying indicia.